ATTACHMENT A

IDENTIFIED DEFICIENCIES
TANK UPGRADE ALTERNATIVES AND RELEASE DETECTION DECISION DOCUMENT

Part 1: Comments Related to the Tank Upgrade Decision Document

No Clear Nexus Between Proposed Decision and Protection to Drinking Water Aquifer

The objective of the Administrative Order on Consent (AOC) is to study the Red Hill facility and its environmental setting to determine the best available practicable technology (BAPT) and practices that should be used at the facility to mitigate risk from potential future releases and provide the best protection to drinking water resources. In the Environmental Protection Agency (EPA) and Hawaii Department of Health (DOH) (Regulatory Agencies) letters dated March 7, 2018 and reiterated in May 16, 2019, we specified that the proposed BAPT must demonstrate that groundwater and drinking water resources are protected. The Navy in the proposed TUA Decision Document has not demonstrated to the Regulatory Agencies that the proposed alternative is the most protective of the groundwater and drinking water resources and other options are either less protective or impractical; and that the proposed alternative adequately mitigates release risk. Evaluations utilizing information gained from other sections of the AOC, such as release detection, groundwater, and risk assessment should be incorporated into the justification.

Instead, page 28 of the Decision Document states, *"In the unlikely scenario of a Significant Release from the Facility, there is a high probability of the Red Hill Shaft being directly impacted within a short period of time. The environmental modeling predicts that for any Significant Release to be captured and prevented from entering the public drinking water source, the Red Hill Shaft would need to maintain continuous pumping, and thus would require a water treatment plant to ensure the quality of the drinking water being supplied to Joint Base Pearl Harbor-Hickam (JBPHH)."* Page 97 of the Decision Document defines Significant (Gradual) Releases as those that occur at rates above 0.5 gallons per hour. The Regulatory Agencies consider the water treatment to be a contingency release response measure and therefore, for the purposes of comparing TUA options, discussion on the related impacts to groundwater and drinking water resources should be provided without this reliance.

Insufficient Comparison of Environmental Performance and Justification of BAPT

The Navy has not adequately discussed the environmental performance of the proposed decision in comparison with the other TUA options. In other words, the Navy has not adequately discussed potential mitigation measures of the proposed alternative in comparison with other alternatives related to protection of groundwater. For a TUA option to be considered BAPT, the Navy needs to demonstrate in the Decision Document that the proposed decision outperforms the other practicable options considered. For example, if secondary containment options outperform single walled options, then to eliminate the secondary containment options, including new tank option, the Navy needs to demonstrate that each of these secondary containment options are impracticable. If an option is determined impracticable, then the corresponding trade-offs with respect to environmental protection should be discussed.

As discussed in the Regulatory Agencies' letter dated March 7, 2018, we requested that the comparison of environmental performance not only consider the tank vessel and other aspects of the fuel management system, but also the environmental performance during all modes of operation (i.e., recommissioning, static storage, transient storage), and from different release initiating events. This assessment of environmental protection should be more detailed and include a discussion of how each alternative would perform relative to risks of minor, significant, and catastrophic releases and under all modes of operation.

Some of this information is provided in a qualitative manner in Appendix C of the Decision Document, explaining that minor releases are better contained in secondary containment options than the single wall options, but did not expand in detail significant releases or catastrophic releases or attempt to quantitatively demonstrate potential impact or consequence to groundwater. Use of hypothetical release scenarios for the various modes of operations and type of release (affecting release rates), could be used to assist in estimating potential release volumes (bounding estimates) for each TUA options for comparison purposes.

In addition, the Regulatory Agencies note that not all similar options will have the same environmental protection and should be discussed. For example:

- Per *Red Hill Repair Tanks Options Study FISC Pearl Harbor, Hawaii, Final Report, September 2008,* page 13, *"Visual detection of a leak is the fastest way to detect leaks. Detection by electronic leak detection systems may have a significant time delay before a leak is detected."* Only one TUA option provides this capability to visually inspect the outer tank wall and provide secondary containment.
- Additionally, two of the assumptions the Navy has applied to the TUA Decision Document (page 14 of the Decision Document), infer that all proposed TUA options, including new construction, would have the same environmental performance during both a kinetic attack or a major seismic event without justification. More supporting information and engineering justification need to be given before these assumptions can be made.

Information gained from all other sections of the AOC should be utilized to best complete the comparison. Where there is uncertainty regarding potential impact, especially with incomplete work in other sections, greater conservatism is warranted in the selection of the TUA proposal and identification of BAPT. Following are more specific comments regarding the TUA evaluation.

Incomplete Analysis of Alternatives and Missing Information

Limitations of the NDE Process and Concerns Related to Corrosion Should Be Addressed

The Navy's Tank Inspection Repair and Maintenance (TIRM) program depends on Non-Destructive Evaluation (NDE) to locate areas of the steel liner that requires repair. Among the assumptions the Navy has applied to the TUA Decision (page 14 of the Decision Document), is that the *"4. NDE is a reliable method for detecting corrosion in the tank liner."* However, the Navy noted on page 86 of the Decision Document that, *"Given the destructive testing results, the Navy is investigating alternatives to improve scanning. The report contains additional recommendation which will be considered by Navy's experts in the continual improvement of TIRM Procedures, including:*

1. *Analysis of the corrosion rate calculation procedures and recommendations for improvement;*
2. *Evaluation of results against current corrosion mitigation practices;*
3. *Recommendations for modification or improvements to TIRM Procedures; and*

4. *Recommendations for additional destructive testing."*

The Regulatory Agencies in our *Response to Corrosion and Metal Fatigue Practices, Destructive Testing Results Report, Red Hill Bulk Fuel Storage Facility (Red Hill), Joint Base Pearl Harbor-Hickam, Oahu Hawaii,* dated March 16, 2020 letter in response to the Navy's *Corrosion and Metal Fatigue Practices, Destructive Testing Results Report, Red Hill Bulk Fuel Storage Facility* report dated July 7, 2019 ("Destructive Test Report"), did not agree with the Navy's conclusion that the NDE results are validated, both by Destructive Testing and thorough, case-by-case analysis, and are requiring additional studies. The additional studies that the Regulatory Agencies are seeking are related to improvements on the NDE process, analyses on the condition of the concrete structure and imbedded steel, evaluation of potential causes for corrosion and possible mitigative actions to reduce corrosion rates, and reassessment of repair thresholds to account for inaccuracies in the NDE process, corrosion rates, and possible delays in repair cycles.

While this work is being performed, the concerns raised in our March 16, 2020 letter should be addressed in evaluating TUA options and comparing environmental performance. For example, the Decision Document should explain:

- How the risk due to limitations of the NDE process to detect back side corrosion and weld flaws that could develop into a leak through the steel lining will be addressed; and
- How risk from potential increased back side corrosion of the steel liner, which may be due to lower pH and concrete passivation loss (indicative of a corrosive environment) will be mitigated.

Military and Industry Standards Do Not Necessarily Equate to BAPT

Standards, such as API 653 And MIL-STD-3007F can be useful guidelines in efforts to design, operate, and maintain fuel storage facilities. However, in order to meet the AOC objective of implementing the BAPT at Red Hill, the Decision Document needs to clearly describe the nexus between these standards and the BAPT, considering the Red Hill facility is a unique facility where many of these standards are not directly applicable.

Evaluation of Operational Life and Associated Cost Estimates

The selection of the alternative that represents BAPT shall be based on several factors listed in the AOC Statement of Work (SOW) section 3, including but not limited to *"... (3) the anticipated operational life of the technology; and (4) the cost of implementing and maintaining the technology."* The anticipated operational life of each of the options were not discussed in the Decision Document, except for the brief mention on page 32 of an asset study, which to our understanding has not yet been performed. The cost estimates provided on page 31 of the Decision Document only include the initial costs incurred for the implementation of each of the options and does not consider the operational life of each alternative or operation and maintenance (O&M) costs. Incorporating the amortization of capital costs over the operational life of each option, as well as all O&M costs, including those for tank inspection and repair, into the cost analysis will likely provide a better comparison of costs.

It is possible that the New Tank option could be the most cost-effective approach to achieving long-term fuel storage and environmental protection goals. Although the Navy does include a discussion of new tanks in Appendix C, this evaluation is limited and does not identify all potential environmental protection advantages of new infrastructure. A cost comparison that is not limited to capital costs is particularly important when comparing the New Tanks alternative to the alternatives that utilize the

existing tanks as either primary or secondary containment since new tanks would have greatly reduced O&M costs and reduced potential for resource damage costs.

Implementation Schedule for BAPT

Section 3.5 of the AOC SOW states, *"The TUA Decision Document shall define and specify the:...(4) plan and schedule for implementation of the BAPT setting forth the order and schedule that Tanks shall receive BAPT, including a schedule for the start of each tank's budget planning cycle..."* While we have a schedule from the TIRM decision document, the TUA decision document does not clearly state the tank order and schedule for implementation, in relation to contract. The Regulatory Agencies note that the TUA Decision Document may be revised under Section 3.7 of the AOC SOW, and tanks that have already begun their budget planning cycle for a previously approved BAPT, but have not completed installation of that BAPT, shall continue with installation of the previously approved BAPT unless all parties agree to a revised schedule for installing the new BAPT on those tanks. Given the relationship between the implementation of the selected BAPT to the current contract schedule, and to the planned update to the TUA Decision Document, a schedule with all of these components shall be provided in the TUA Decision Document.

Performance Criteria for BAPT

Similarly, Section 3.5 of the AOC SOW states, *"The TUA Decision Document shall define and specify the: ...(5) overall performance criteria for successful application of BAPT. The TUA Decision Document shall either incorporate the TIRM Procedures Decision Document approved by the Regulatory Agencies in Section 2 above, or, consistent with the BAPT identified, incorporate a modified TIRM Procedures Decision Document."* Because only a general assessment of environmental performance is provided, the performance criteria for the proposed BAPT or a comparison with other alternatives have not been provided. In addition, with the information provided, it is unclear the specific changes to the currently approved TIRM Report that the Navy is seeking. This should be more clearly defined.

Experimental Pilot Project to Fully Coat Interior Surface of a Tank Requires Detail

On page 13 of the Decision Document, under "Additional Improvement—Mid-Term/Long-Term," the Navy proposes to evaluate fully coating the interior surface of one tank as a pilot, if laboratory testing, to be completed by the end of September 2019, indicates the coating could act as a hydraulic barrier/liner and provide corrosion resistance. The Regulatory Agencies recognize that this is not a commitment to a proposal, nor a formal request for a pilot program. Should the Navy decide to pursue a pilot, information required under Section 3.6 of the AOC SOW shall be submitted for review by the Regulatory Agencies. Such information includes but is not limited to the overall operational design of the pilot program; the technology and procedural aspects of the pilot; and the performance criteria and method of evaluating the success of the pilot program. Any proposal for a pilot shall also describe how the action will mitigate risk to the environment.

The Regulatory Agencies note that the proposed epoxy coating will not address backside corrosion concerns on the steel liner but may potentially seal porous welds and other small defects, as is currently applied to new weld joints during the clean, inspect, and repair process.

The Navy's "Double-Wall Equivalency Secondary Containment Or Remove Fuel From Red Hill In Approximately the 2045-Time Frame" Requires Further Discussion

This proposal is provided under "Studies Concerning the Future of the Facility," on page 31 of the Decision Document. It is not tied to any TUA option currently before us, and therefore is not clear how this plan will is intended to be implemented. If the Navy wants to incorporate this concept in a future submission as a new TUA option, please consider the following:

1. Double-wall equivalency secondary containment needs to be defined. There are regulatory definition and requirements for secondary containment. The objective of secondary containment for underground tanks is risk mitigation. Secondary containment has the potential to contain both acute and chronic releases. As we have previously specified as our expectation for comparative environmental performance, the Navy must present a detailed comparison of how the proposed secondary containment equivalency will perform against the other options, including the secondary containment options. If equivalent risk mitigation measures cannot achieve that of secondary containment, then the Navy needs to clearly define and justify their alternative plan and schedule to achieve risk mitigation adequate to protect the water supply. All other required information necessary to compare this option with the other proposed TUA options must also be provided.
2. Section 3.5 AOC SOW specifies that all tanks in operation shall have deployed Regulatory Agencies' approved BAPT by September 2037 or be taken out of use, temporarily closed, and emptied of all regulated substances or permanently closed pursuant to applicable regulations or as approved by the Regulatory Agencies. Currently, the 2045-time frame does not appear to comply with section 3.5 AOC SOW agreed upon deadline for BAPT tank compliance.
3. State of Hawaii UST regulations (section 11-280.2-21(c)) for airport hydrant fuel distribution systems and UST systems with field-constructed tanks require by July 15, 2038, that *"...tanks and piping installed before the effective date of these rules must be provided with secondary containment that meets the requirements of section 11-280.1-24 or must utilize a design which the director determines is protective of human health and the environment..."*. Similarly, there is no information to support that this proposal will comply with state regulations.

Part 2: Comments Related to the Release Detection Decision Document

Justification on the Selected Combination of Release Detection Systems is Required

Release detection is a critical aspect of risk management at all underground storage tank facilities. The AOC requires the Navy and DLA to summarize their current release detection practices and investigate opportunities to improve their release detection practice to better the Red Hill Bulk Fuel Storage Facility's ability to operate in an environmentally protective manner. The Navy has proposed the following as their improved release detection system:

- Install permanent enhanced release detection equipment in order to have the ability to run as many tank tightness tests as desired. Currently the facility is conducting tank tightness testing at a semi-annual frequency.
- Install slots in stilling wells to improve precision of existing automatic tank gauging (ATG) system with automatic fuel handling equipment (AFHE).
- Conduct a real-time soil vapor monitoring pilot project.
- Continue to install additional groundwater monitoring wells.
- Continue environmental sampling—soil vapor, oil/water interface measurements, and groundwater samples.

Release detection methods should provide the earliest possible detection of a release in order to quickly implement mitigation (release response) measures and minimize impact to the environment. Thus, detection and mitigation of the release is preferred to be addressed before impact to groundwater. The Decision Document does not clearly describe release detection options explored and the basis for the selection of these collective systems.

Commented [LK1]: This was taken from Page 4 of the July 2020 letter. Please confirm that I captured intent of the comment. I was under the impression that the ACC required them to evaluate various enhanced systems, which they did, and that was the justification.

Greater Detail on the Integration of Release Detection Systems is Needed

The Decision Document should clearly describe how the new enhanced release detection will be implemented and integrated with the other release detection systems (inventory and soil vapor monitoring). This should include specifics on monitoring hardware, data collection, and operations. The proposal should also describe the performance goals of the system and how this new system, along with other existing and proposed systems that provide indications of a suspected release, will be used as multiple lines of evidence in an overall release detection and response system, and comply with UST regulations.

Similarly, the inventory monitoring system is a critical component of the Release Detection at the facility, the Decision Document should include greater detail that describes the improvements to the inventory system, its performance goals and how this improved system will be integrated with the overall release detection and response system.

In addition, the Navy should explain how vapor monitoring will be used as another line of evidence for release detection, which the Regulatory Agencies believe is more sensitive than inventory monitoring and can be used more frequently than precision static tightness testing.

The frequency of precision release detection tests (tank tightness tests) and the basis for this frequency need to be clearly defined and justified in the Decision Document. Higher frequency will result in a greater degree of risk mitigation; however, in order to conduct a precision test, the tank being tested needs to be isolated to insure an accurate test. This testing interrupts normal operations, so the Navy needs to evaluate the trade-off between frequency and operations to justify proposed frequency. Additionally, the Decision Document also needs to clearly describe the types of conditions or indications that would require additional precision testing (for example, in response to alarms and when soil vapor measurements show an increasing trend). UST regulations require all suspected releases to be confirmed within seven days. Investigations and confirmation require a system test (tanks and piping tightness test) or another procedure approved by the Department of Health.

The Decision Document should present clear release detection and response decision trees that establish inspectable and auditable records of release detection system alarms or other indications of a suspected release. This should include the details of causative research that is triggered with alarm, actionable thresholds or unusual operating conditions. The decision tree should describe what actions are automatic versus what actions rely on the judgement of specialized operators. The Decision Document should describe how data indicating suspected and confirmed releases will be shared with the regulatory implementing agency (DOH). The proposed decision should analyze the timeline for providing this information to the implementing agency and clearly describe the causative research (tests) completed as timely as possible, including an option for real-time alarm reporting.

Effectiveness of the Improvements to the Overall Release Detection System Should be Quantified

The Decision Document should describe the effectiveness of the integrated system. For example, describe how the integrated release detection system affects precision and accuracy and how they will be

used to reduce thresholds for alarms and action triggers such as in unscheduled fuel movement alarm thresholds. This discussion should include any limitations on the system such as limitations during transient conditions after a fuel movement and limitations caused by the unique hemispherical tank bottom.

Explanation of New Soil Vapor Concentration Thresholds and Basis to Discontinue Trend Evaluation is Needed

The Navy proposes to continue monthly soil vapor monitoring (SVM), but with reduced soil vapor thresholds from 280,000 parts per billion of volatile organic compounds by volume (ppbv) to 50,000 ppbv for tanks with jet fuel and from 14,000 ppbv to 8,000 ppbv for tanks with marine diesel. Based on the 2014 release, the Regulatory Agencies agree that the existing 280,000 ppbv action level is too high and needs revision; however, the selection of the new values and how they will be used to trigger action requires further discussion.

Page 23 of the Decision Document states, *"The existing protocols for evaluation of soil gas monitoring events uses a concentration trend methodology to trigger causative research."* The document does not define what "causative research" entails. The document further states, *"In addition, the 2014 release from Tank 5 was detected as part of inventory control reconciliation. The leak would not have been detected for several months using only the trend-based soil gas monitoring. Use of the 50,000 and 8,000 ppb thresholds for jet fuel and diesel fuel, respectively, would have allowed the release to be detected sooner and independent of inventory control measures. Based on 10 years of monitoring, the concentration trend evaluations do not appear to be useful for identification of possible fuel releases, and therefore will be discontinued."*

The Regulatory Agencies agree that soil vapor monitoring with improvements can potentially provide early detection of a release. For example, on December 9, 2013, Tank 5 refill operations started. On December 23, 2013, routine SVM showed a four to five-times increase in soil vapor levels in SV-5M and SV-5D (the middle and deep probes) in comparison to the average of the previous six months' data. On December 10, 2013, the first Unscheduled Fuel Movement (UFM) alarm went off. From January 13 -17, 2014 the tank was drained. On January 15, 2014 and January 31, 2014 SVM levels were as much as 350 times higher than the December 23, 2013 results. Therefore, SVM can provide another line of evidence of a release, and if done more frequently, could be more sensitive than inventory monitoring.

However, it is unclear why concentration trend evaluation will be discontinued. The Navy, in the Decision Document should explain the basis for this change. Rather than a fixed action level (thresholds), it appears that comparison of soil vapor measurements for a specific probe to the statistical background concentration for the specific probe that accounts for variations in existing conditions, similar to a concentration trend evaluation, would better account for the varying environmental conditions surrounding each probe (porosity, historic fuel release) that could impact the data, and its interpretation. Then, similar to the description in the Decision Document, any detection above a statistically significant increase would trigger the collection of a soil vapor sample to determine whether the detected vapor is fresh or weathered. An on-site gas chromatography/mass spectrometry unit could expedite results and associated release response actions, as needed.

In addition, based on our review of data collected since 2005, DOH observations of the current SVM program, and upon discussions with the Navy's contracting Officer Technical Representative, we believe that current data collection can be improved. While a detailed discussion of the deficiencies in the current monitoring program is outside of the scope of this letter, the rehabilitation of inoperable probes and implementation of a better quality assurance protocol will reduce random and systematic sampling and analytical errors.

Greater Detail on The Real-Time Soil Vapor Continuous Monitoring Pilot Study is Needed.
Real-time soil vapor monitoring can be an important source of information for an overall leak detection system and the Navy proposed implementing a continuous soil vapor monitoring pilot test. The pilot will consist of a monitoring system for one to three tanks using an auto-sampler PID. Results would be documented over six months to one year. However, the goals and details of a pilot program are not provided with sufficient detail.

- The Navy should develop goals and procedures for this pilot study in consultation with the regulatory agencies and other critical stakeholders.
- The performance criteria and method of evaluating the success of the pilot program; and a plan for terminating the pilot program should be clearly defined.
- The pilot proposal should clearly define the details of causative research tests or actions. For example, what constitutes an "outlier" versus what is statistically significant? More frequent readings will certainly give more volatility than a monthly sampling, which may be addressed through statistical calculations. How will the pilot study handle inconsistencies with monthly monitoring? What would a causative decision tree look like with a continuous monitoring approach compared to the monthly monitoring?
- The Regulatory Agencies' comments on the current SVM program should be considered in developing the scope of the pilot project.
- A proposed implementation schedule should be provided.

A Detailed Release Response Action Plan Needs Be Included in the Decision Document

Ability to identify and respond rapidly to indications of a release is critical to effective risk mitigation. In the event of a confirmed release, the Navy will need available ullage to quickly drain the tanks and prevent more fuel to release into the environment. The Decision Document mentions having available ullage, but is silent on how this response process will be implemented.

The Decision Document should describe in quantitative terms the response procedures and timelines, and how these procedures are optimized in order to achieve effective risk mitigation. For example, this description should include:

- When a drain down is warranted or when a tank tightness test should be initiated. This should include how the multiple lines of evidence related to release detection will be utilized in an objective manner to trigger an immediate response action such as drain down, or how the integrated release detection system consisting of vapor monitoring, inventory monitoring, visual inspections, manual gauging, will trigger one another or the initiation of a tank tightness testing.
- New procedures that allow operators to transfer fuel out of a tank within 36 hours. Although mentioned on page 11 of the Decision Document, there is no information to substantiate this duration. Contradictory to this claim, on page 183 of the *Navy's New Release Detection Alternatives Report*, dated July 25, 2018, two hypothetical release response scenarios referenced longer time frames for emptying a tank (96.3 hours and 118.6 hours). A clear description of the improvements made/proposed that allow for this significant improvement should be provided. After the 2014 release from Tank 5, the draining process took approximately 5 days, January 13-17, 2014. If spare ullage is not available, draining could take longer.

- Bounding estimates of possible release volumes based on the release response plan for various release scenarios (minor, significant, and catastrophic).
- A detailed description of training and drills to be implemented to assure that the release detection and response procedures are effective and will perform as planned.

Evidence is Needed to Support the Claim that Minimal Contamination will Result from a Minor Release.

The Navy claims that even in the unlikely event of a minor release, the multiple layers of release detection listed in the Decision Document will be able to detect releases and, because of their response action plans, there will be minimal contamination allowed into the environment. The Decision Document does not provide sufficient information to make this case and should be revised to provide quantitative analysis and evidence of this risk mitigation achieved through these improvements. Bounding estimates of possible release volumes based on the release response plan for various release scenarios, as mentioned in the previous comment, can help with this illustration. In addition, if damages occur, what plans are in place to address potential resource damages?

Minor releases are defined on page 97 of the Decision Document as releases occurring at rates less than 0.5 gph (or 4,380 gallons per year). Questions remain about how quickly the Navy would be able to respond to various types of releases and mitigate the release.

Significance of Slow Chronic Fuel Seepage Below the Tank Tightness Testing Threshold is not Addressed.

The Navy's release detection testing demonstrated that commercial technologies exist that can detect releases at rates as low as 0.5 gallons per hour or 4380 gallons per year. The release that occurred in 2014 was much larger than this, with a loss of about 27,000 gallons in a month or an average rate of around 37 gallons per hour. Along with the tank tightness testing on a periodic basis, other information that allows for detection of leaks includes the near continuous inventory monitoring system along with periodic soil vapor measurements.

However, even with all these release detection systems, slow chronic leaks can go undetected. This concern is most significant with single walled systems. The Decision Document does not adequately analyze the significance of this concern and describe the potential environmental consequences of this limitation and potential mitigation measures.

Response Actions and Related Environmental Impact from a Significant Release is Needed.

The Decision Document, page 97 states, "*The early detection and mitigation of a Significant (Gradual) Release is critical for minimizing the overall volume and subsequent impact of any release. Currently, groundwater modeling suggests any Significant (Gradual) Release could eventually be treated at a Red Hill Shaft water treatment plant without posing risk to the public drinking water source.*" The document does not attempt to quantify potential volume of release based on release response measures but relies on a water treatment system at Red Hill to ensure available drinking water. Because of this reliance, the RD Decision Document should include specifics about the timeframe for evaluation, design, and construction of the water treatment system. If the Navy cannot proceed directly to design of a system, the Decision Document must adequately describe the uncertainty related to the ability to design and construct a

treatment system that justifies the need for a feasibility study, and discuss the related impacts for not having a water treatment system in response to a release.

The Regulatory Agencies note that the degree of capture at Red Hill Shaft for a range of possible release scenarios has not yet been fully evaluated and remains unclear whether it is an adequate measure to prevent impact to other receptors.

Increase Transparency of Data Related to Release Detection to Build Greater Public Confidence in the Operational Integrity of the Red Hill System.

Navy should consider publishing data on groundwater monitoring and release detection on their website on an ongoing basis to increase transparency to build public confidence.

Part 3: Fail-Safe Water Protection Strategy

The Overall Strategy Needs to Provide a Fail-Safe Plan for Water Protection

The overall objective of both DOH's and EPA's underground storage tank programs is to protect human health and the environment from releases at underground storage tank facilities. This is accomplished by requiring prevention, detection and response systems. Our objective is to prevent all releases, but this is not always possible.

Given the importance of the aquifer below the Red Hill tanks as a major source of drinking water for Honolulu, the Navy needs to establish a contingency strategy to assure no impairment of drinking water quality and no disruption in drinking water availability. This fail-safe protection strategy should be presented in the TUA and Release Detection Decision Documents.